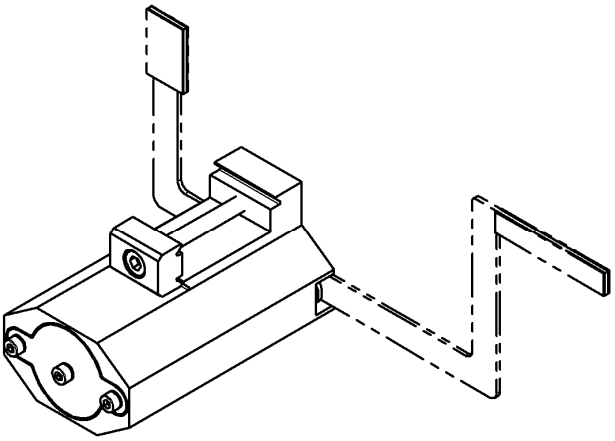

USER MANUAL

MONTRAC COMPONENTS

Electric switchable cam

BA-100075

Starting from serial number -

English, edition 05/2010

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1. Important information

1.1. Introduction

These instructions describe the mechanical construction, load limits, assembly, maintenance and spare parts of the electrically switchable cam.

1.2. Declaration of installation

Pursuant to EC Machinery Directive 98/37/EC, Appendix II B.
Pursuant to EC Machinery Directive 2006/42/EC, Appendix II B.

Manufacturer:
SCHMID Group | montratec AG
Zeilmattenring 6
4563 Gerlafingen
Tel. +41 32 55 88 700, Fax. +41 32 55 88 799

1.2.1. Function

The electrically switchable cam is used so that not every shuttle stops in the defined position or when the shuttle starts backwards.

1.2.2. Mounting instructions

The mounting instructions in compliance with EC Machinery Directive 2006/42/EG, Appendix VI, are available in the Instruction Manual.

1.2.3. Guidelines fulfilled by the electrically switchable cam

The Montrac System must not be put into operation until it has been determined that the Montrac system in which the electrically switchable cam has been installed conforms to the stipulations of EC Machine Directive 98/37/EG and 2006/42EG.

1.2.4. Safety instructions

The safety instructions, especially those concerning the electrical connection, must be heeded during commissioning, operation, repair work and decommissioning. Non-compliance with these instructions is an improper use of the transport system and its components.

The operation of a Montrac transport system in an explosive atmosphere (combustible gases, vapors or dust) may lead to their ignition and must therefore not be carried out.

1.2.5. Dangers

In order to exclude dangers under operating conditions, the requirements specified in the EC Declaration of Conformity with regard to a) the electrical supply and b) the safety equipment must be fulfilled.

1.2.6. Validity of the Operating instructions

Our products are continually updated to reflect the latest state of the art and practical experience. In line with product developments, our Operating instructions are continually updated.

Operating instructions have an article number, e.g. BA-100075.
The article number and edition number are displayed on the title page.

Validity

Full name	Short name	Article no.
Electric switchable cam "off" (power-off for shuttle visible)	-	57023
Electric switchable cam "on" (power-off for shuttle invisible)	-	57024
PV flag for A-cam (travel direction U)	-	57008
PV flag for A-cam (travel direction GU)	-	57442
Flag for AB-cam	-	58183
Flag for B-cam	-	58184
Flag for A-cam and AB-cam	-	57020

1.2.7. Additional information

The aim of the present operating instructions is to enable users to employ the electric switchable cam correctly and safely. Should further information be required relating to the particular application, do not hesitate to contact the manufacturer.

Special technical documentation according to 2006/42/EG, Appendix VII, Part B, can be provided at any time and digitally communicated.

When ordering the user manual it is essential to quote the type and serial number.
Additional operating instructions can be obtained from our website at www.montratec.com.

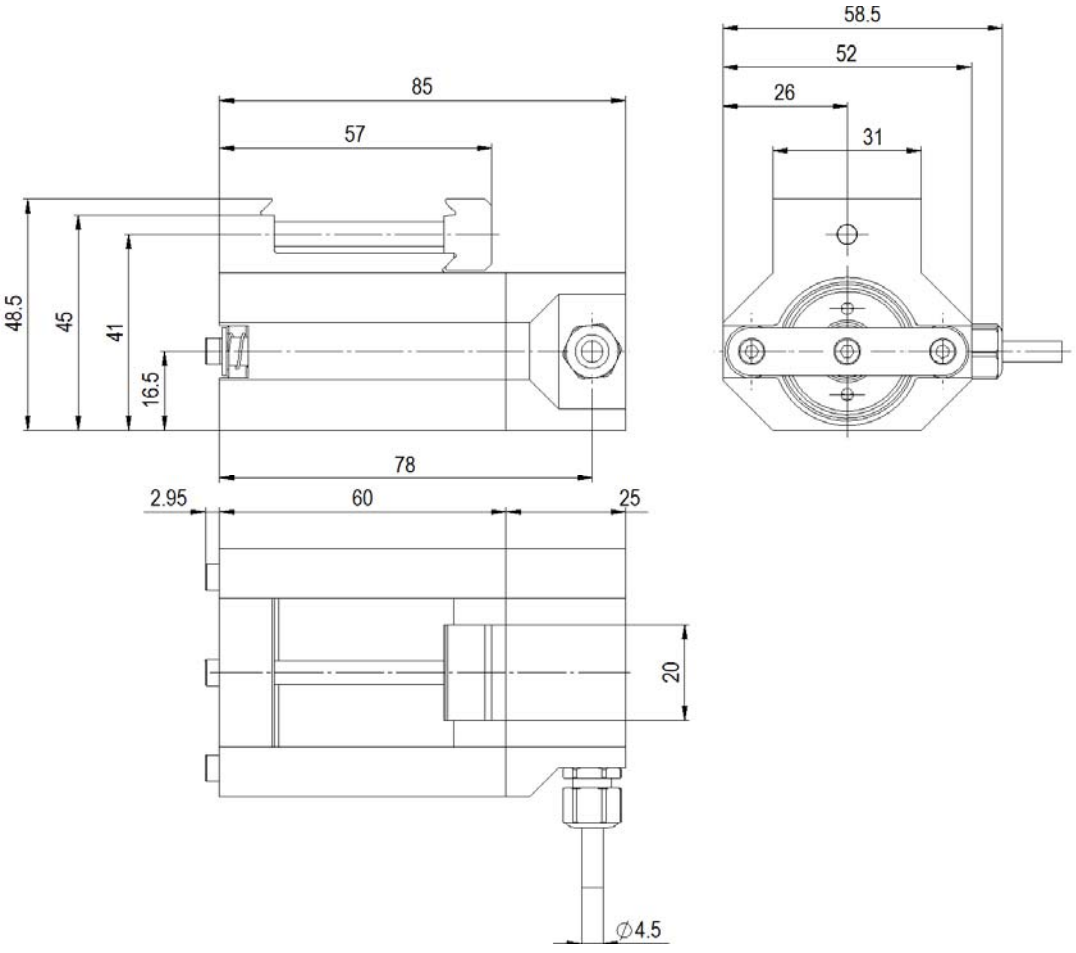
2. Technical data

2.1. Technical data

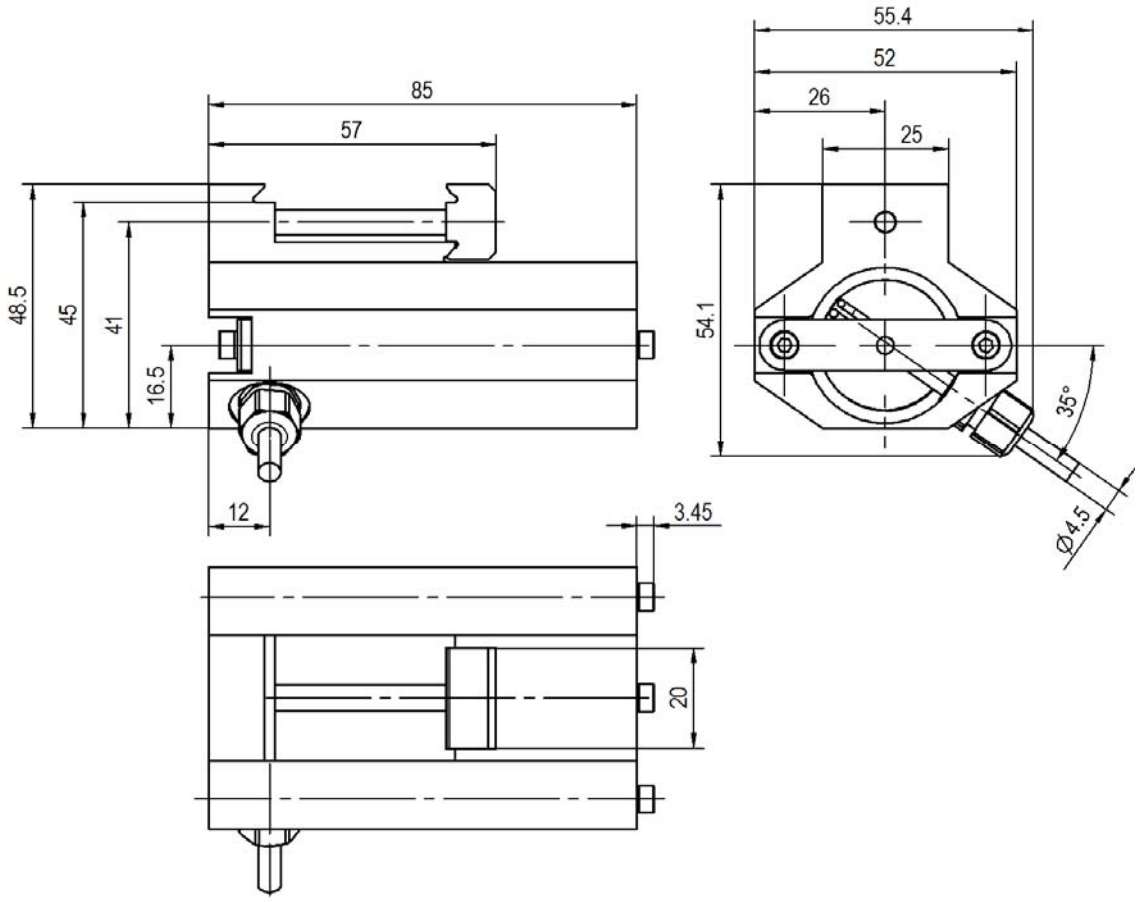
Weight		[kg]	0.5
Connected voltage		[V DC]	24
Current consumption		[A]	0.5
Ambient conditions:	Temperature	[°C]	10 – 40
	Rel. humidity		5%-85% without condensation
	Air purity		Atmosphere purity for the assembly of precision mechanical products

2.2. Dimension sheet

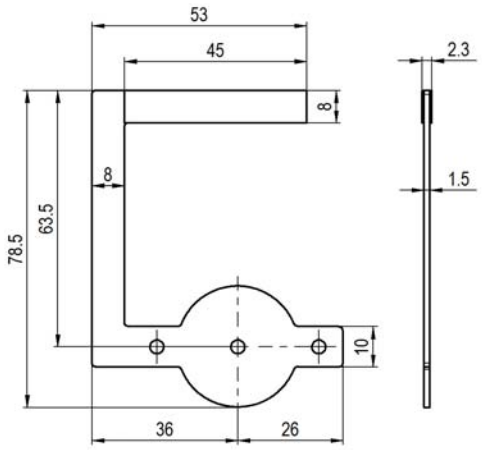
Electric switchable cam "off" (power-off for shuttle visible)



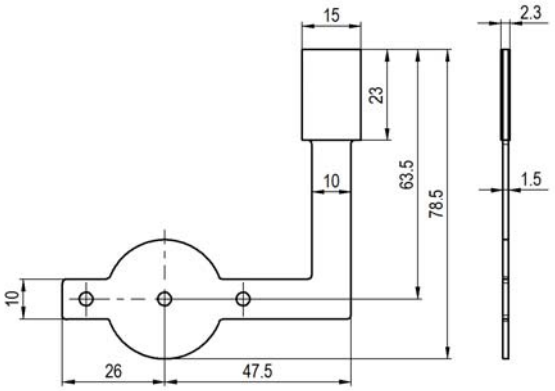
Electric switchable cam "on" (power-off for shuttle invisible)



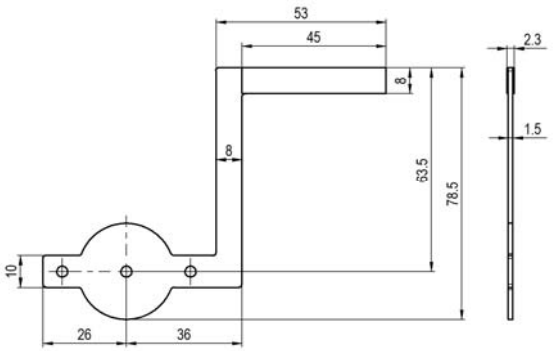
PV flag for A-cam (travel direction U) (order number 57008)



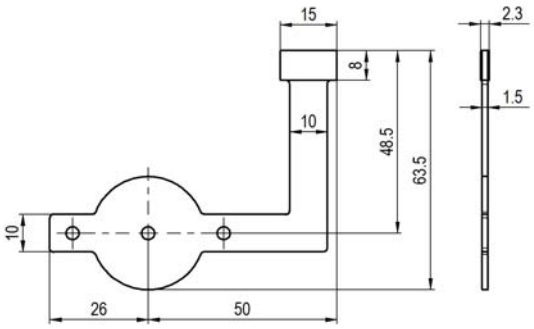
Flag AB-cam (order number 58183)



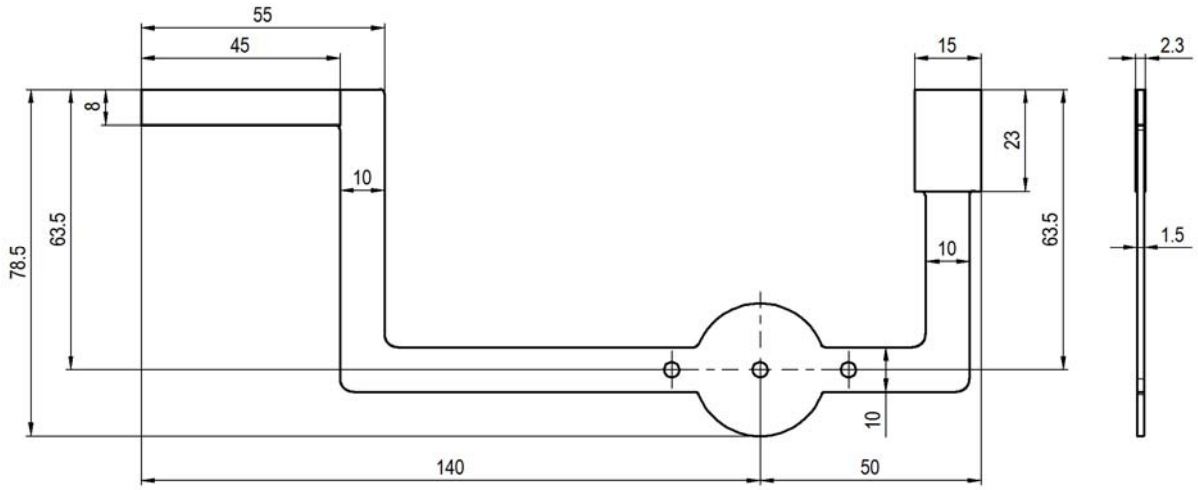
PV flag for A-cam (travel direction GU) (order number 57442)



Flag for B-cam (order number 58184)

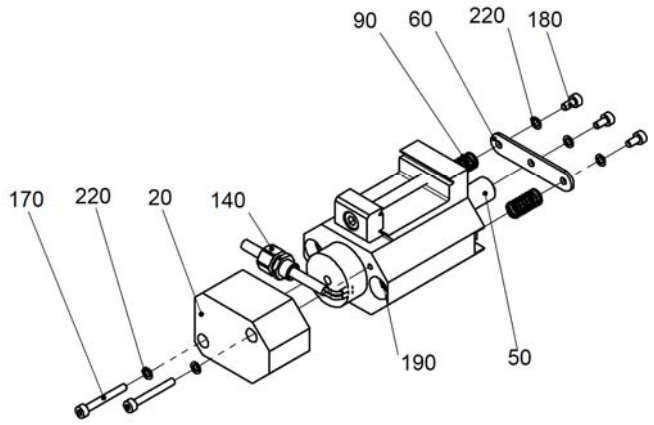


PV flag for AB and A-cam (order number 57020)



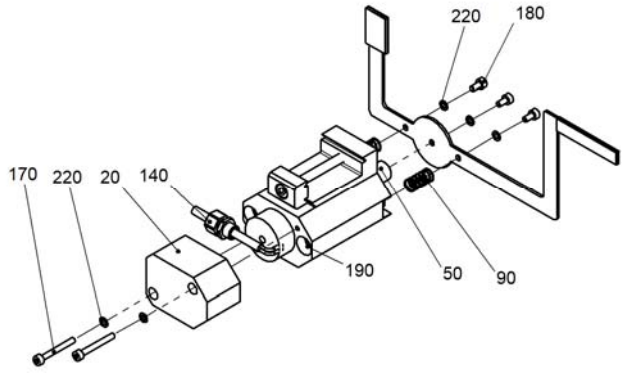
3. Installation and commissioning

Electric switchable cam "off"



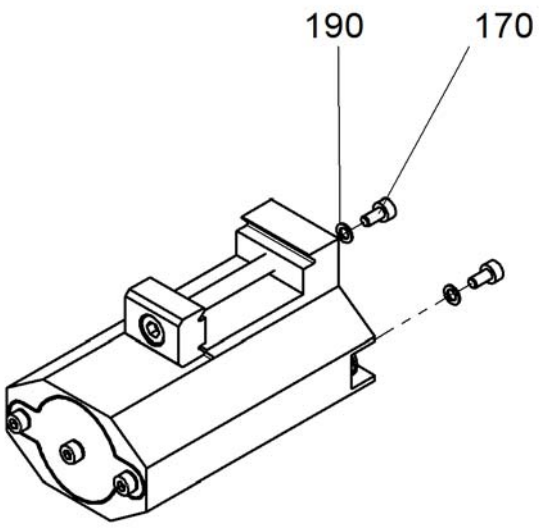
1. Secure the IRM at the desired stopping point. Undo the cable gland pos. 140 and the two cylinder screws pos. 170 and remove the cover pos. 20. By undoing the three screws pos. 180, remove the mounting plate pos. 60. (Pay attention to the two compression springs pos. 90 that are behind the mounting plate!)

Electric switchable cam "off"



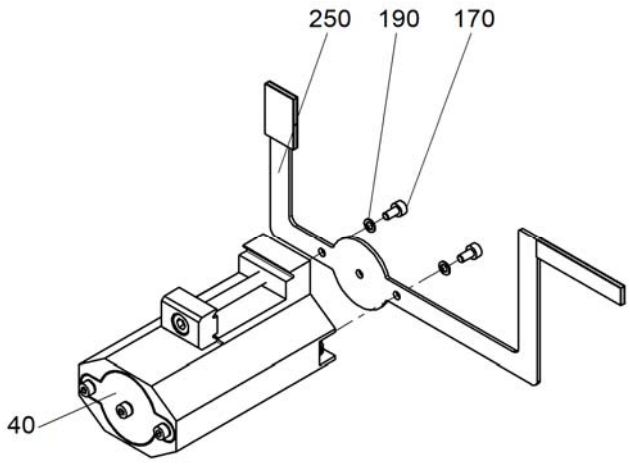
2. Then mount the selected flag in the desired position with the three cylinder screws pos. 180. Make sure when tightening the cylinder screws that the flag is not skewed!
3. Check that the cam is functioning properly. Press the cam from the front to the stop. Remove your fingers; the spring force moves the cam to the initial position. If the compression spring does not move the cam to the initial position, the parts were skewed during assembly. Repeat beginning with step 2.
4. Now the cover pos. 20 is mounted with the cylinder screws pos. 170 and the cable gland pos. 140 is tightened.

Electric switchable cam "on"



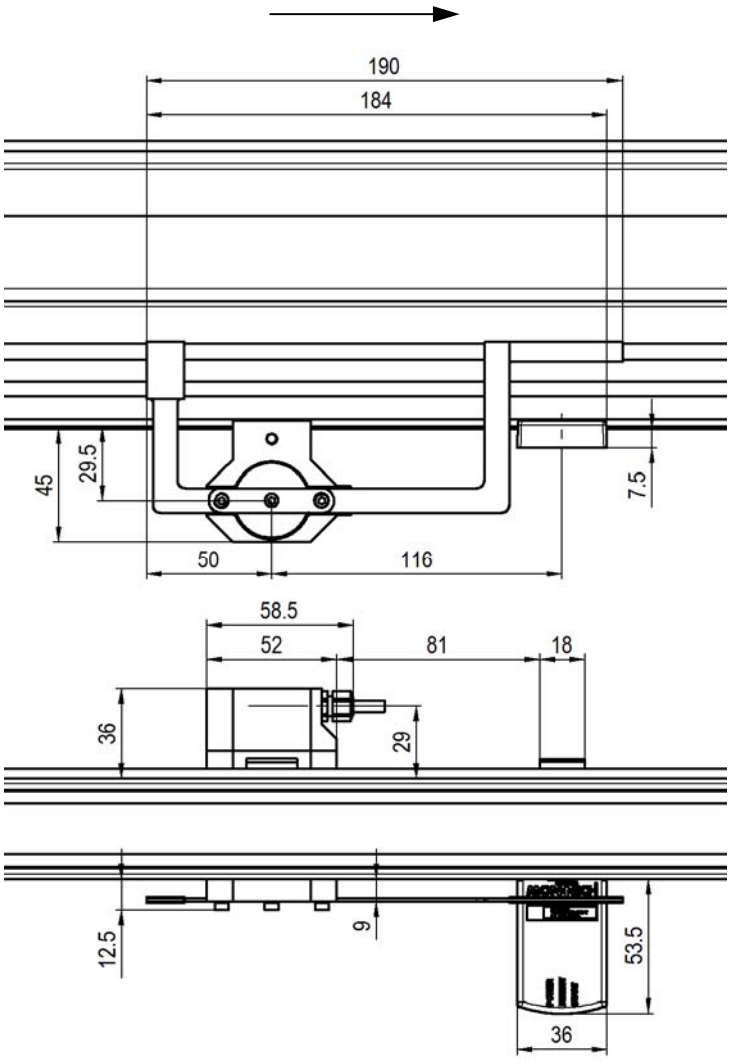
1. Loosen the two screws (Pos. 170). (In this variant, the mounting plate will remain installed.)

Electric switchable cam "on"



2. Mount the selected flag pos. 250 in the desired position with the two cylinder screws pos. 170. Make sure when tightening the cylinder screws pos. 170 that the flag pos. 250 is not skewed!
3. Check that the cam is functioning properly. Press the magnetic plate pos. 40 from the rear to the stop. Remove your fingers; the spring force moves the cam to the initial position. If the compression spring does not move the cam to the initial position, the parts were skewed during assembly. Repeat beginning with step 2.

Fig. 3-1: Travel direction GU

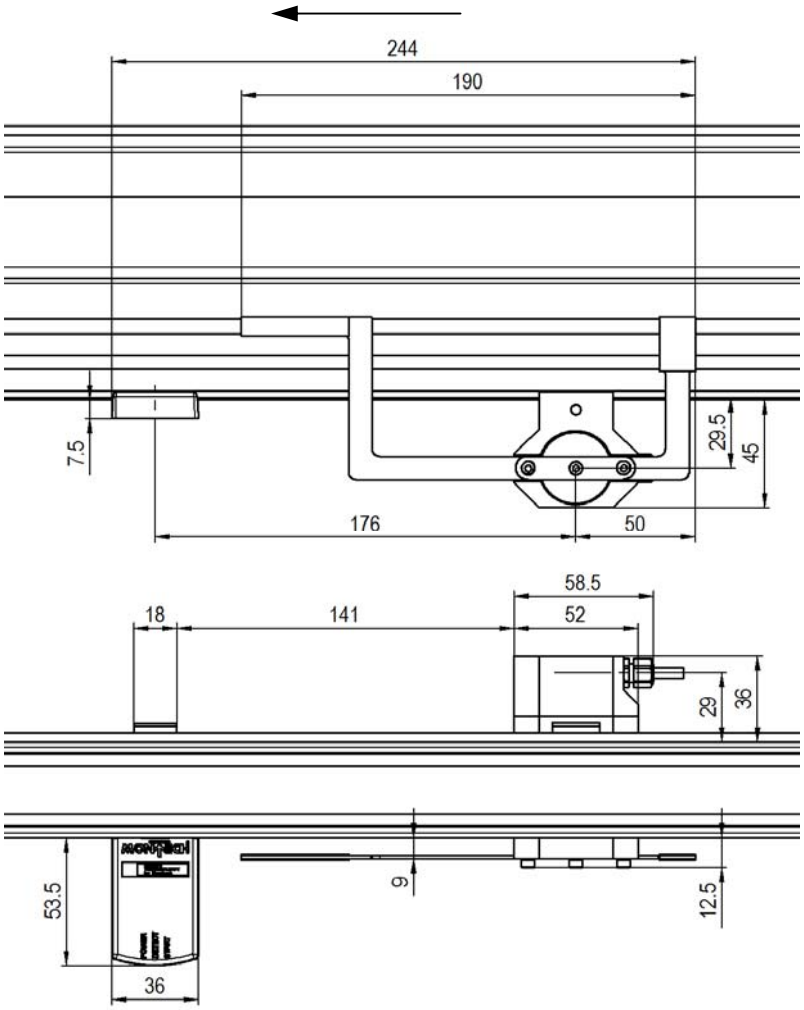


1. Fasten the cam in the desired position on the track in the system.

2. Fasten the IRM on the track as shown in Fig.3-1, 3-2, 3-3, 3-4, align and tighten.

3. Plug in the electric switchable cam to the PLC.

Fig. 3-2: Travel direction U

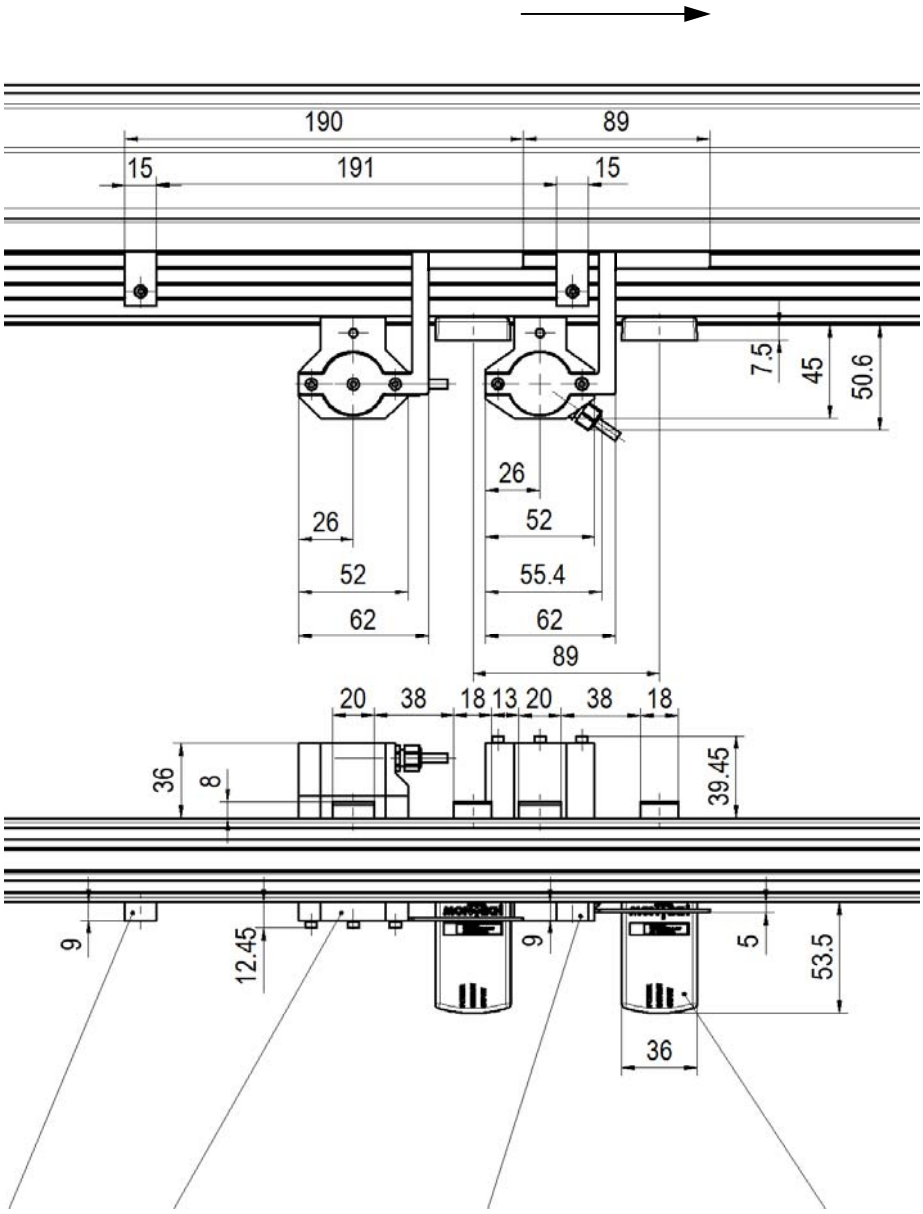


1. Fasten the cam in the desired position on the track in the system.

2. Fasten the IRM on the track as shown in Fig.3-1, 3-2, 3-3, 3-4, align and tighten.

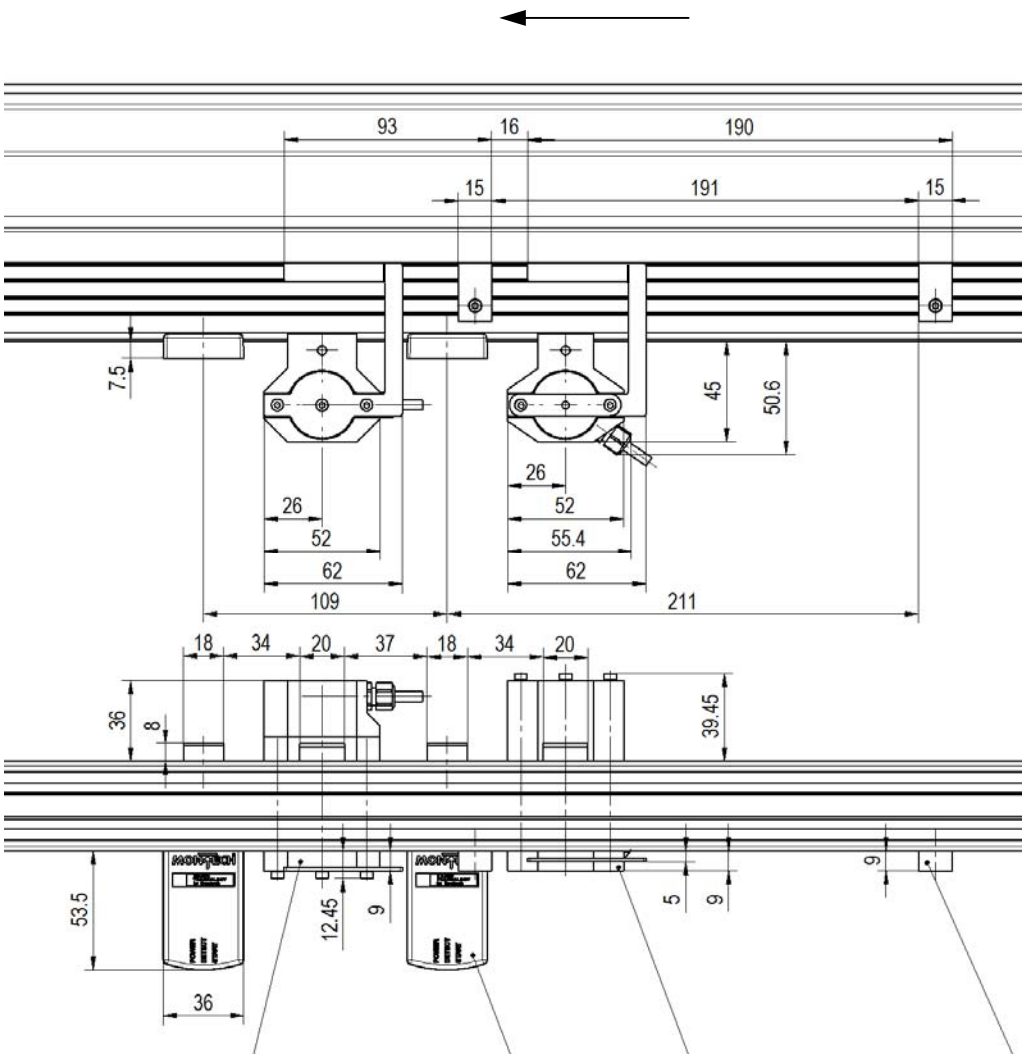
3. Plug in the electric switchable cam to the PLC.

Fig. 3-3: Installation variant with PV (travel direction GU)



AB-cam | Electric switchable cam (original position "off") | Electric switchable cam (original position "on") | IRM

Fig. 3-4: Installation variant with PV (travel direction U)



Electric switchable cam (original position "off") IRM Electric switchable cam (original position "on") AB-cam

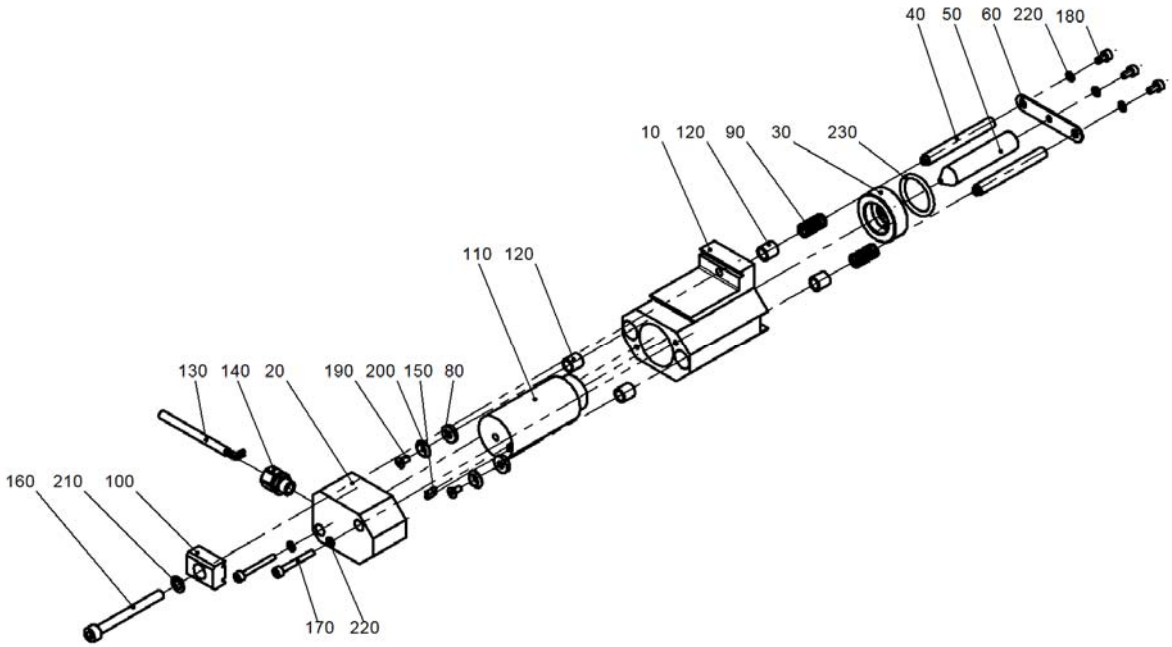
4. Maintenance

Every 6 months.

Operational check:
Check that the electric switchable cam runs smoothly.

5. Parts list

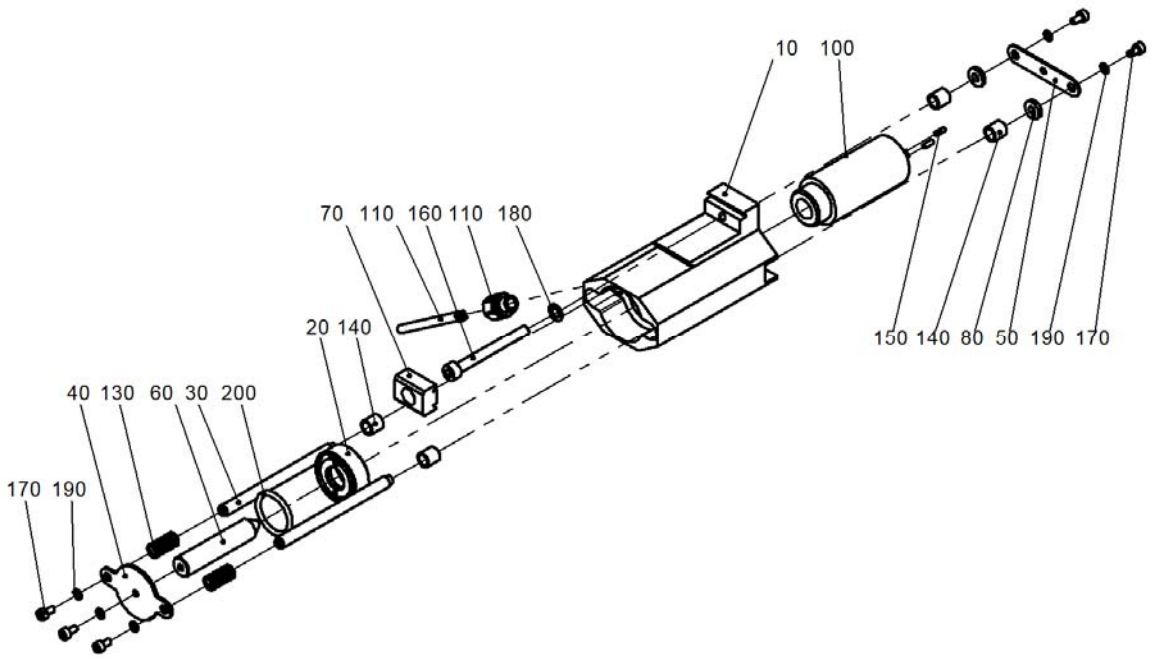
5.1. Electric switchable cam “off“ (power-off for shuttle visible)



Item	Sym.	Designation	Art. No.	Material
	◘	Electric switchable cam “off“	57023	Various
10	◊	Housing	57018	Aluminum
20	◊	Cover	57098	Aluminum
30	◊	Tension ring	60523	Aluminum
40	◊	Guide rod	56899	Steel
50	◊	Cylinder	57101	Steel
60	◊	Holder	57426	Steel
80	◊	Ring	57191	NBR
90	◊	Pressure spring	57171	Steel
100	◊	Linear clamping jaw ø 5.8	41188N	Aluminum
110	◊	Magnet STA 26x52	520182	Steel / Copper
120	◊	Plain bearing 6x8x8	520212	Plastics
130	◊	Cable	505827	Plastics
140	◊	Cable connection M8	505828	Brass
150	◊	Sleeve	520291	Plastics
160	◊	Socket cap screw M 5x50	502517	Steel
170	◊	Socket cap screw M3x25	506707	Steel
180	◊	Socket cap screw M3x6	520043	Steel
190	◊	Countersunk screws M3x6	504795	Steel
200	◊	Washer for Countersunk screws M3	520151	Steel
210	◊	Ribbed washer M5x9x0.6	505254	Steel
220	◊	Ribbed washer M3x5.5x0.45	505385	Steel
230	◊	O-Ring ø20x2.5	520055	NBR

◊ Not available ex stock individually (upon request)
◘ Price-listed items available ex stock

5.2. Electric switchable cam “on“ (power-off for shuttle invisible)



Item	Sym.	Designation	Art. No.	Material
	◘	Electric switchable cam “on“	57024	Various
10	◊	Housing	60525	Aluminum
20	◊	Tension ring	60523	Aluminum
30	◊	Guide rod	60526	Steel
40	◊	Magnetic plate	57009	Steel
50	◊	Holder	57426	Steel
60	◊	Cylinder	57101	Aluminum
70	◊	Linear clamping jaw ø 5.8	41188N	Aluminum
80	◊	Ring	57191	NBR
100	◊	Magnet STA 26x52	520182	Steel / Copper
110	◊	Cable connection M8	505828	Brass
120	◊	Cable	505827	Plastics
130	◊	Pressure spring	57171	Steel
140	◊	Plain bearing 6x8x8	520212	Plastics
150	◊	Sleeve	520291	Plastics
160	◊	Socket cap screw M 5x50	502517	Steel
170	◊	Socket cap screw M3x6	520043	Steel
180	◊	Ribbed washer M5x9x0.6	505254	Steel
190	◊	Ribbed washer M3x5.5x0.45	505385	Steel
200	◊	O-Ring ø20x2.5	520055	NBR

◊ Not available ex stock individually (upon request)

◘ Price-listed items available ex stock

6. General information

6.1. Environmental compatibility and disposal

Materials used:
- Aluminum
- Copper
- Steel
- Rubber （NBR）

Surface treatment:
- Aluminum anodization
- Brass and steel nickel-plating

Shaping processes:
- Aluminum extrusion
- Aluminum, steel machining
- Cutting plastics with water jet
- Cutting steel with laser

Disposal:
Electric switchable cams which cannot be used any more should be recycled not as complete units but rather after dismantling into individual parts according to type of material. The type of material for each part is shown in the spare parts lists. Material which cannot be recycled should be appropriately disposed of.